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EXAMINER	
ZHOU, TING	

ART UNIT	PAPER NUMBER
2173	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/628,506	RAPPAPORT ET AL.	
	Examiner	Art Unit	
	Ting Zhou	2173	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 January 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2-15 and 28-173* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2-15, 28-135, 137-139, 141-144, 146-152, 154-160, 162-168 and 170-173* is/are rejected.

7)☒ Claim(s) *136, 140, 145, 153, 161, 169* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. The amendment filed on 28 January 2005 have been received and entered. The applicant has cancelled claims 1 and 16-27 and added new claims 122-173. Claims 2-15 and 28-173 as amended are pending in the application.

Allowable Subject Matter

2. Claims 136, 140, 145, 153, 161 and 169 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

3. The following is a statement of reasons for the indication of allowable subject matter:

Each of dependent claims 136, 140, 145, 153, 161 and 169, when taken as a whole with the corresponding independent and intervening claims, identifies the distinct feature of the display presenting markers or statistics directly on a building drawing which indicate differences between compared predicted or simulated data and actual measurement data. The closest prior art, "SMT Plus 1.0 User's Manual", authored by Skidmore et al. (hereinafter "Skidmore") and Jin U.S. Patent 6,266,615 teach a portable wireless device communicating geographical map and location information with a server computer. In the case of the Skidmore reference, Skidmore teaches the display of markers or statistics on a floor plan of a building or predicted or simulated data such as contour coverage (Skidmore: Figure 5.9 for example). In the case of the Jin reference, Jin teaches measuring data such as location/position information (Jin: column 4, lines 8-20). The cited prior art fails to teach comparing measured position with predicted or simulated

location and displaying markers or statistics directly on a building drawing that indicates differences between predicted or simulated data and actual measurement data, and thus fail to anticipate or render the above limitations obvious.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 2-15, 28-135, 137-139, 141-144, 146-152, 154-160, 162-168 and 170-173 are rejected under 35 U.S.C. 103(a) as being unpatentable over "SMT Plus 1.0 User's Manual", authored by Skidmore et al. (hereinafter "Skidmore") and Jin U.S. Patent 6,266,615.

Referring to claims 28, 51, 85, 122 and 141, Skidmore teaches a computerized method and system comprising a site specific computer implemented model representing a physical environment in which a communications network is or will be deployed (displaying a site map representing a physical environment, such as the floor plan of a building, to assist a user in planning for wireless communications systems in indoor environments) (Skidmore: page 2, first and second paragraph and further shown in Figure 4.2), the site specific computer implemented model providing a representation of locations one or more components or physical objects within the physical environment which is either two dimensional or three dimensional (the computer displays a floor plan of a configuration of a communications network in a building which

includes a plurality of components that can be used in the network, such as base stations and interference sources) (Skidmore: pages 2, first and second paragraphs, pages 10 and 21-22, and further shown in Figures 4.2 and 5.1), the site specific computer implemented model is used for performance prediction of a communications network based on one or more factors selected from the group consisting of choice of components to be used within the physical environment, choice of parameters of the components, choice of locations for the components within the physical environment, and orientation of the components at the locations (the floor plan can be simulated to predict performance such as coverage contours; the simulation results vary depending upon the number and location of base stations and coverage contours) (Skidmore: page 9, pages 23-24, section 4.5, pages 29-32, section 5.4). Furthermore, Skidmore teaches a computer running the SMT Plus program creates the floor plan model shown in Figure 4.2 (Skidmore et al.: pages 2 and 25), however, Skidmore fails to explicitly teach a portable computer which acts as a client to the computer running the SMT Plus program. Jin teaches a computer which stores and uses site specific computer implemented models of a physical environment (the server stores databases of geographical map information) (Jin: column 2, line 61 – column 3, line 10, column 10, lines 1-9 and Figure 1). In addition, Jin teaches a server computer or computers for running a computer program which uses the site specific computer implemented model (the server stores databases of geographical map information of particular geographical areas) (Jin: column 2, line 61 – column 3, line 10, column 10, lines 1-9 and Figure 1); at least one portable computer which acts as a client to the server computer or computers (wireless devices that act as client devices interacting with the server) (Jin: column 4, lines 33-39 and column 6, lines 46-56), the at least one portable computer can download, upload or store a

representation of at least a portion of the site specific computer implemented model from the server computer or computers (sending geographical map information to the user, i.e. client's wireless device, to be displayed) (Jin: column 3, lines 1-10, column 10, lines 1-9 and further shown in Figure 1); at least one measurement device for measuring one or more performance measurements or metrics within the physical environment, the measurement device being associated with the at least one portable computer (the wireless device has positioning capabilities such as a GPS system to determine the location of a user, i.e. measurement of a geographical position) (Jin: column 4, lines 8-40 and column 5, line 64 – column 6, line 56), and wherein the updated performance measurements made with the measurement device are communicated to the server computer or computers and can be correlated with location information where the performance measurements are made (the user's device, i.e. the wireless device can update, i.e. correlate the geographical position/location information of the server with his currently measured location, obtained with the GPS measuring device) (Jin: column 3, lines 1-10, column 4, lines 8-40 and column 5, line 64 – column 6, line 56). It would have been obvious to one of ordinary skill in the art, having the teachings of Skidmore and Jin before him at the time the invention was made, to modify the system for displaying a site-specific computer implemented model of a physical environment for performance prediction of a communications network of Skidmore to include the portable computer capable of downloading information from and updating information to a server of measurement taken, taught by Jin. One would have been motivated to make such a combination in order to facilitate user collaboration and data synthesizing and synchronization, allowing easy modification and sharing of data via the use of portable devices; furthermore, with the use of handheld devices, which are easier to carry, users

would have the added convenience and portability of being able to receive data from and communicate data to other computer systems while traveling.

Referring to claim 130, Skidmore teaches a computerized system comprising a site specific computer implemented model representing a physical environment in which a communications network is or will be deployed (displaying a site map representing a physical environment, such as the floor plan of a building, to assist a user in planning for wireless communications systems in indoor environments) (Skidmore: page 2, first and second paragraph and further shown in Figure 4.2), the site specific computer implemented model providing a representation of one or more components or physical objects (the computer displays a floor plan of a configuration of a communications network in a building which includes a plurality of components that can be used in the network, such as base stations and interference sources) (Skidmore: pages 2, first and second paragraphs, pages 10 and 21-22, and further shown in Figures 4.2 and 5.1), the site specific computer implemented model is used for performance prediction of a communications network based on one or more factors selected from the group consisting of choice of components to be used within the physical environment, choice of parameters of the components, choice of locations for the components within the physical environment, and orientation of the components at the locations (the floor plan can be simulated to predict performance such as coverage contours; the simulation results vary depending upon the number and location of base stations and coverage contours) (Skidmore: page 9, pages 23-24, section 4.5, pages 29-32, section 5.4). Furthermore, Skidmore teaches a computer running the SMT Plus program creates the floor plan model shown in Figure 4.2 (Skidmore et al.: pages 2 and 25) and can determine updated performance predictions based on modifications to the one or

more factors (users can modify the floor plan by adding/deleting/repositioning base stations and interferences sources and display predicted coverage contours corresponding to the modification) (Skidmore: page 9, pages 23-24, section 4.5, pages 29-32, section 5.4). However, Skidmore fails to explicitly teach a portable computer which acts as a client to the computer running the SMT Plus program. Jin teaches a computer which stores and uses site specific computer implemented models of a physical environment (the server stores databases of geographical map information) (Jin: column 2, line 61 – column 3, line 10, column 10, lines 1-9 and Figure 1). In addition, Jin teaches a server computer or computer for running a computer program which uses the site specific computer implemented model (the server stores databases of geographical map information of particular geographical areas) (Jin: column 2, line 61 – column 3, line 10, column 10, lines 1-9 and Figure 1); at least one portable computer which can download, upload or store one or more representation of the computer implemented model from the server computer or computers (sending geographical map information to the user, i.e. client's wireless device to be displayed) (Jin: column 3, lines 1-10, column 10, lines 1-9 and further shown in Figure 1), the at least one portable computer can be used to modify, using the one or more representations, one or more factors used in the computer implemented model, wherein the at least one portable computer can upload modifications or updated performance predictions to the server computer or computers (the wireless device, specifically the GPS system measuring location information of the wireless device, is used to update, i.e. modify geographical position/location information, for example such as geographical map information displayed) (Jin: column 2, line 67-column 3, line 10, column 5, line 64-column 6, line 11, column 6, lines 44-56 and column 9, line 35-column 10, line 10). It would have been obvious to one of ordinary skill in the art, having the teachings of

Skidmore and Jin before him at the time the invention was made, to modify the system for displaying a site-specific computer implemented model of a physical environment for performance prediction of a communications network of Skidmore to include the portable computer capable of downloading information from and updating information to a server of measurement taken, taught by Jin. One would have been motivated to make such a combination in order to facilitate user collaboration and data synthesizing and synchronization, allowing easy modification and sharing of data via the use of portable devices; furthermore, with the use of handheld devices, which are easier to carry, users would have the added convenience and portability of being able to receive data from and communicate data to other computer systems while traveling.

Referring to claims 2 and 37, Skidmore, as modified, teach the at least one portable computer is a hand-held computer (wireless handheld devices such as PDA, cellular telephone, etc.) (Jin: column 4, lines 33-39).

Referring to claims 3 and 38, Skidmore, as modified, teach the site specific computer implemented model provides a three-dimensional representation of the physical environment (the computerized model, i.e. floor plan of the building contains a height parameter, such as the ceiling height and height above floor, giving the model a third dimension) (Skidmore: pages 2, first and second paragraphs, pages 10 and 21-22, and further shown in Figures 4.2 and 5.1)

Referring to claims 4, 40, 73 and 108, Skidmore, as modified, teach the physical environment is a building and the site specific computer implemented models include a two or three dimensional representation of at least one floor plan of the building (SMT Plus allows a user to display a two dimensional floor plan of a building; the computerized model, i.e. floor

plan of the building contains a height parameter, such as the ceiling height and height above floor, giving the model the possibility of a third dimension) (Skidmore: page 2, second paragraph and pages 10 and 21-22, and further shown in Figures 4.2 and 5.1).

Referring to claims 5 and 74 and 109, Skidmore, as modified, teach the site specific computer implemented model includes two or three dimensional representations of a plurality of floor plans for a plurality of floors in the building (a plurality of floors plans, i.e. the floor plans of a plurality of floors of a building, can be viewed at once) (Skidmore: page 21, section 4.3).

Referring to claims 6, 41 and 42 and 110, Skidmore, as modified, teach the physical environment is a campus of buildings and the representation provided by the site specific computer generated model includes at least one floor plan for each of a plurality of buildings in the campus (the user can select a plurality of buildings or environments to display its three dimensional floor plan) (Skidmore: page 20 and page 25, section 5.1), and wherein the portable computer (wireless devices that act as client devices interacting with the server) (Jin: column 4, lines 33-39 and column 6, lines 46-56) includes means to select a building within the campus of buildings and to display the at least one floor plan for the building selected for displaying measurements or predictions (the user can display any of a plurality of floor plans and display predictions, i.e. predicted coverage contours for a plurality of buildings or environments by selecting and loading the desired floor plan) (Skidmore: page 20 and page 25, section 5.1).

Referring to claims 7 and 43, Skidmore, as modified, teach the representation provided by the site specific computer implemented model includes a plurality of floor plans for a plurality of floors for a building of the campus of buildings (Figure 4.2 shows a plurality of floor

plans corresponding to a plurality of floors of a building) (Skidmore: page 10 and pages 15-17, section 3.4).

Referring to claims 8, 44, 76 and 111, Skidmore, as modified, teach the components are selected from the group consisting of base stations, base station controllers, amplifiers, attenuators, antennas, coaxial cabling, fiber optic cabling, connectors, splitters, repeaters, transducers, converters, couplers, leaky feeder cables, hubs, switches, routers, firewalls, power distribution lines, copper wiring, twisted pair cabling, and wireless access points (selecting base stations, antennas, interference sources, etc. to be placed on the floor plan) (Skidmore: page 2, second paragraph and page 9).

Referring to claims 9, 36, 77 and 112, Skidmore, as modified teach the communications network includes wireless communication devices (such as base stations and interference sources) (Skidmore: page 9).

Referring to claims 10, 45, 78 and 113, Skidmore, as modified, teach the physical environment is an outdoor environment and the computerized models represent an outdoor environment in two or three dimensions (maps of geographical areas) (Jin: column 3, lines 1-10 and Figure 1).

Referring to claims 11, 46, 79, 80, Skidmore, as modified, teach a position-tracking device used to determine a position of the at least one portable computer or the measurement device within the physical environment (the wireless device is equipped with a GPS positioning system to measure the location/position of the device, i.e. the user) (Jin: column 4, lines 33-39).

Referring to claims 12 and 47, Skidmore, as modified, teach the communication network components are maintained in a bill of materials (components of the network, such as floors of a building, are maintained as groups of partitioned layers) (Skidmore: pages 16-17, section 3.4).

Referring to claims 13, 33, 49, 52, 135, 144, 152, 160 and 168, Skidmore, as modified, teach a display associated with the at least one portable computer or the server computer or computers (the wireless device of Jin has an enhanced graphics display; Skidmore also teaches a display that displays predicted/simulated data, i.e. predicted coverage contours) (Jin: column 10, lines 1-10 and Figure 1; Skidmore: page 2 and Figure 5.9).

Referring to claims 14, 34, 56, 58, 93, 118 and 127, Skidmore, as modified, teach the server computer or computers or the at least one portable computer can be used to input changes to the factors used in the site specific computer implemented model (the wireless system prompts and accepts user inputs in determining geographical area location information; furthermore, Skidmore also teaches that users can input changes to the computer model by adding/deleting/repositioning base stations and interference sources) (Jin: column 2, lines 45-55 and column 9, line 35 – column 10, line 10; Skidmore: page 9, pages 23-24, section 4.5, pages 29-32, section 5.4).

Referring to claims 15, 35, 50, 82, 119 and 128, Skidmore, as modified, teach the changes that are input with the server computer or computers or the at least one portable computer modify a representation of a configuration of the communications network (the user can simulate and display predicted coverage contours after making changes such as adding/deleting/repositioning base stations and interference sources) (Skidmore: page 9, pages 23-24, section 4.5, pages 29-32, section 5.4).

Referring to claim 29, Skidmore, as modified, teach the measurement device is positioned inside or is part of the at least one portable computer (wireless device equipped with GPS positioning systems) (Jin: column 4, lines 28-44).

Referring to claims 30, 53 and 88, Skidmore, as modified, teach the measurement device is connected to, contained within or interfaceable with the portable computer (wireless device equipped with GPS positioning systems) (Jin: column 4, lines 28-44).

Referring to claims 31, 87 and 89, Skidmore, as modified, teach the at least one portable computer can download or upload performance measurements, predictions, or equipment modifications to or from the server computer or computers (Jin teaches the ability to communicate information such as location and maps to and from a plurality of distributed servers; Skidmore teaches performance measurements and predictions such as coverage contours) (Jin: column 2, line 56 -column 3, line 10, column 5, line 64 – column 6, line 11, column 10, lines 1-9 and further shown in Figure 1; Skidmore: page 9, pages 23-24, section 4.5, pages 29-32, section 5.4).

Referring to claims 32, 54, 57 and 61, Skidmore, as modified, teach the at least one portable computer can download or upload (communicate) performance measurements, predictions or equipment modifications to or from another computer which is different from the server computer or computers (Jin teaches the ability to communicate information such as locations and maps to and from a plurality of distributed servers; Skidmore teaches performance measurements and predictions such as coverage contours) (Jin: column 2, line 56 -column 3, line 10, column 5, line 64 – column 6, line 11, column 10, lines 1-9 and further shown in Figure 1; Skidmore: page 9, pages 23-24, section 4.5, pages 29-32, section 5.4).

Referring to claims 39, 72 and 107, Skidmore, as modified, teach at least one site specific three dimensional representation is constructed from a series of two dimensional representations (two dimensional representations of floors of a floor plan can become a three-dimensional representation by adjusting the height parameter, such as ceiling height, height above floor, etc., from zero to some height value, thus giving the representation a third dimension) (Skidmore: page 10 and Figure 5.4).

Referring to claims 48, 83, 120, 133, 142, 150, 158 and 166, Skidmore, as modified teach the at least one measurement device operates in an un-manned fashion (the user's location, taken by the GPS system of the wireless device can be taken, or updated, in an unmanned fashion, i.e. automatically initiated by the server based on the location of the user) (Jin: column 3, lines 7-10).

Referring to claims 55 and 90, Skidmore, as modified, teach updating, modifying, logging, storing or archiving one or more of the computer generated model, the representation of the computer generated model, network component parameters, locations, or orientations, and predicted or measured results, can be performed at the server computer or computers (the user can simulate and display predicted coverage contours after making changes, i.e. modifications, such as adding/deleting/repositioning base stations and interference sources) (Skidmore: page 9, pages 23-24, section 4.5, pages 29-32, section 5.4).

Referring to claims 59 and 94, Skidmore, as modified, teach an editor for making the changes (users can make changes/edits to the model, i.e. floor plan, via the interface by adding/deleting/repositioning base stations and interference sources) (Skidmore: page 9, pages 23-24, section 4.5, pages 29-32, section 5.4).

Referring to claim 60, Skidmore, as modified, teach the at least one portable computer performs or controls at least one of a) performance predictions, b) autonomous measurements, c) analysis of cost data of components or network infrastructure and d) tracking network equipment changes (the wireless device performs and controls measurements, such as location information, via a GPS system) (Jin: column 4, lines 28-39).

Referring to claim 62, Skidmore, as modified, teach at least one of a display or storage device for displaying or storing, respectively, the changes at either the server computer or computers or the at least one portable computer or the another portable computer (user made changes such as adding/deleting/repositioning base stations and interference sources are displayed on the interface of the computer for viewing, as shown in Figure 5.5) (Skidmore: page 9, pages 23-24, section 4.5, pages 29-32, section 5.4).

Referring to claims 63, 126 and 129, Skidmore, as modified, teach efficient change tracking is employed (the user can simulate and display predicted coverage contours with the map reflecting changes such as adding/deleting/repositioning base stations and interference sources, i.e. the changes are tracked in order to be used for simulation) (Skidmore: page 9, pages 23-24, section 4.5, pages 29-32, section 5.4).

Referring to claims 64, 95 and 99, Skidmore, as modified, teach communication of simulation or prediction or measurement data occurs through one of a docking cradle connection, a wireless connection, a wired connection, or via electronic media (communicating via the Internet network) (Jin: column 5, lines 53-63).

Referring to claims 65 and 100, Skidmore, as modified, teach the at least one portable computer includes a plurality of portable computers, and wherein either or both predicted or

measured performance measurements or metrics may be communicated between the server computer or computers and the plurality of portable computers (wireless devices communicate information with distributed server computers) (Jin: column2, lines 56-63).

Referring to claims 66 and 101, Skidmore, as modified, teach the at least one portable computer provides data to the server computer or computers, and the server computer or computers processes provided data to provide a modified result (users, via the wireless device, provides data such as location information when the user moves out of a area, to the server and the server provides a modified, i.e. new map corresponding to the user's location, to the wireless device) (Jin: column 3, lines 1-10, column 5, line 64-column 6, line 11 and column 6, lines 44-56).

Referring to claims 67 and 102, Skidmore, as modified, teach the modified result is communicated to the at least one portable computer (the server provides a modified, i.e. new map corresponding to the user's location, to the wireless device) (Jin: column 3, lines 1-10, column 5, line 64-column 6, line 11 and column 6, lines 44-56).

Referring to claims 68, 70, 103 and 106, Skidmore, as modified, teach the components include at least one communication network component, and wherein characteristics such as a performance attribute and a location or orientation of a communications network component of the at least one communication network component may be tracked, shared, revised or substituted (the components on the floor plan include communication network components such as base stations and interference sources, and a performance attribute, such as coverage contours of the base stations and interference sources of the floor map can be tracked, i.e. simulated; furthermore, the location of the base stations and interference sources, i.e. their placed position

on the displayed floor plan, can be tracked and revised, i.e. viewed and changed via adding/deleting/repositioning the base stations and interference sources) (Skidmore: pages, 2, 9-10 and Figures 4.2 and 4.3). Although Skidmore, as modified, does not explicitly teach that characteristics such as a cost and maintenance record of a network component may be tracked, shared, revised or substituted, it would have been obvious to one of ordinary skill in the art, that the tracked, shared, revised or substituted component characteristics taught by Skidmore, as modified, can include any number of other characteristics, such as a cost and maintenance record of the component, in order to provide extra functionalities for the interface, allowing the system to keep track of, and edit/interact with a wide range of information related to the communications network.

Referring to claims 69 and 104, Skidmore, as modified, teach the components include at least one communication network component, and wherein a performance attribute of a communications network component of the at least one communication network component may be tracked, shared, revised or substituted (the components on the floor plan include communication network components such as base stations and interference sources, and a performance attribute, such as coverage contours of the base stations and interference sources of the floor map can be tracked, i.e. simulated) (Skidmore: pages, 2, 9-10 and Figure 4.3).

Referring to claims 71 and 105, Skidmore, as modified, teach components include at least one communication network component, and wherein a location or orientation of a communication network component of the at least one communication network component may be tracked, shared, revised or substituted (the components on the floor plan include communication network components such as base stations and interference sources, and the

location of the base stations and interference sources, i.e. their placed position on the displayed floor plan, can be tracked and revised, i.e. viewed and changed via adding/deleting/repositioning the base stations and interference sources) (Skidmore: pages, 2, 9-10 and Figure 4.2).

Referring to claims 75 and 125, Skidmore, as modified, teach the at least one portable computer (wireless devices that act as client device interacting with the server) (Jin: column 4, lines 33-39 and column 6, lines 46-56) can be used to select specific floors plans from the plurality of floor plans (the user can display any of a plurality of floor plans for a plurality of buildings or environments by selecting and loading/displaying the desired floor plan) (Skidmore: page 20 and page 25, section 5.1).

Referring to claims 81 and 121, Skidmore, as modified, teaches the server computer or computers or the at least one portable computer can be used to alter a layout of components (the user can make changes to the layout of components on the floor plan via the computer's interface by adding/deleting/repositioning base stations and interference sources on the floor plan) (Skidmore: page 9, pages 23-24, section 4.5, pages 29-32, section 5.4 and Figure 5.5).

Referring to claim 84, Skidmore, as modified, teaches the computer generated model represents at least one of objects in a building or their locations, communications component data and their location, building information or properties, radio propagation properties, bill of materials data, environmental data, cost data, and asset management data (the floor plan displays objects such as base stations or interference sources at a particular location on the floor plan) (Skidmore: page 2, second paragraph).

Referring to claim 86, Skidmore, as modified, teach displaying data that represents either or both the three dimensional representation or the representation or the performance prediction

(displaying a floor plan of the building and the predicted coverage contours for the floor plan) (Skidmore: page 9, pages 23-24, section 4.5, pages 29-32, section 5.4 and Figures 5.5 and 5.9).

Referring to claim 91, Skidmore, as modified, teach downloading, uploading or storing step downloads an updated representation of the computer generated model from the server computer or computers to the at least one portable computer, or to another computer (upon the user indicating that he has moved to a different geographical area, i.e. updated his location/position, the server can send corresponding navigational information, i.e. map representation, relating to his current, or updated position to the wireless device) (Jin: column 3, lines 1-10, column 5, lines 53-column6, line 11, column 6, lines 44-56 and column 9, line 35-column 10, line 10).

Referring to claims 92, 138, 147, 155, 163 and 171, Skidmore, as modified, teach one or more site specific data are communicated between a server computer or computers and the at least one portable computer or another computer, wherein the site specific data includes one or more of network information, measured data, and predicted data (the server computer communicates network information such as navigational information, i.e. geographical maps, to the wireless device) (Jin: column 3, lines 1-10 and Figure 1), and wherein the site specific data are capable of being processed and analyzed remotely (navigational information such as location/position information can be processed and analyzed, i.e. viewed, by the user operating the remote wireless device) (Jin: column 3, lines 1-10 and column 5, line 53-column 6, line 11) and of being updated so as to allow new, updated, performance predictions to be communicated between the server computer or computers and the at least one portable computer or another computer (communicating new location/position information from the wireless device to the

server computer in order to update the server computer's information) (Jin: column 3, lines 1-10, column 5, line 53-column 6, line 11, column 6, lines 44-56 and column 10 lines 1-10).

Referring to claim 96, Skidmore, as modified, teach the downloading, uploading or storing step uploads an updated representation of the computer generated model from the at least one portable computer to the server computer or computers or to another computer (the portable computer can send updated location/position geographical map information to the server computer) (Jin: column 3, lines 1-10, column 5, line 53-column 6, line 11, column 6, lines 44-56 and column 10 lines 1-10).

Referring to claim 97, Skidmore, as modified, teach the uploading, downloading or storing step stores changes at either the server computer or computers or the at least one portable computer or at another computer (geographical map information, such as streets and measured locations/positions are stored in databases at the server computers; maps can also be loaded and stored on the wireless devices) (Jin: column 2, lines 56-63, column 4, lines 45-49 and column 5, line 64-column 6, line 11).

Referring to claim 98, Skidmore, as modified, teach the downloading and uploading operate in real time or near real time (the wireless device with the GPS system operates in real-time) (Jin: column 5, line 64 – column 6, line 11 and column 10, lines 10-14).

Referring to claim 114, Skidmore, as modified, teach identifying a location of the at least one portable computer or the measurement device (identifying, or measuring the location of a wireless device of the user via the GPS positioning device) (Jin: column 4, lines 8-13 and 33-44).

Referring to claim 115, Skidmore, as modified, teach the identifying step is performed automatically (once the user's location changes, the location information can be updated, i.e.

determined, either automatically initiated by the server or performed on demand, i.e. at the request of the user) (Jin: column 3, lines 7-10).

Referring to claim 116, Skidmore, as modified, teach the identifying step is performed on demand (once the user's location changes, the location information can be updated, i.e. determined, either automatically initiated by the server or performed on demand, i.e. at the request of the user) (Jin: column 3, lines 7-10).

Referring to claim 117, Skidmore, as modified, teach the identifying step is performed using information obtained from a position-tracking or locationing device (identifying, or measuring the location of a wireless device of the user via the GPS positioning device) (Jin: column 4, lines 8-13 and 33-44).

Referring to claim 123, Skidmore, as modified, teach the server computer or computers updates the specific computer implemented model of the physical environment (the user can simulate and display predicted coverage contours after making changes such as adding/deleting/repositioning base stations and interference sources) (Skidmore: page 9, pages 23-24, section 4.5, pages 29-32, section 5.4) to include the one or more performance measurements or metrics (the user's device, i.e. the wireless device can update the geographical map information of the server with his current location, obtained with the GPS measuring device) (Jin: column 3, lines 1-10, column 4, lines 8-40 and column 5, line 64 – column 6, line 56).

Referring to claim 124, Skidmore, as modified, teach the display can display one or more of location information, predictions, measurements, and at least a portion of the site specific representation (the user can display floor plans, locations of base stations and interference

sources on the floor plans and display predictions, i.e. predicted coverage contours) (Skidmore: page 20 and page 25, section 5.1 and further shown in Figure 5.9).

Referring to claim 131, Skidmore, as modified, teach the server computer or computers update the computer implemented model to include the modifications or updated performance predictions (the modified location information of the user will be updated by the server) (Jin: column 3, lines 7-10).

Referring to claim 132, Skidmore, as modified, teach a measurement device for measuring performance metrics in the physical environment (the wireless device has positioning capabilities such as GPS to determine the location of a user, i.e. measurement of a geographical position) (Jin: column 4, lines 8-40 and column 5, line 64 – column 6, line 56), the measurement device providing performance measurements or metrics to either or both the at least one portable computer or the server computer (the user's device, i.e. the wireless device can update the geographical map information of the server with his current location, obtained with the GPS measuring device) (Jin: column 3, lines 1-10, column 4, lines 8-40 and column 5, line 64 – column 6, line 56).

Referring to claims 134, 143, 151, 159 and 167, Skidmore, as modified, teach either or both the at least one measurement device or the at least portable computer is positioned at a fixed location (the wireless device measures the exact position/location of the user, therefore, when the user stops a certain fixed location, the exact position at which the user stopped can be measured to determine the location of the user) (Jin: column 4, lines 8-20), and wherein either or both of the at least one measurement device or the at least one portable computer can be used to passively or autonomously report communication network performance to the server computer

(position information determined from the GPS system of the wireless device can be updated to the server either at the request of the user's device or automatically by the server based upon the location of the user) (Jin: column 3, lines 1-10).

Referring to claims 137, 146, 154, 162 and 170, Skidmore, as modified, teach the performance measurements are correlated to position information (the user's device, i.e. the wireless device can update, i.e. correlate the geographical position/location information of the server with his currently measured location, obtained with the GPS measuring device) (Jin: column 3, lines 1-10, column 4, lines 8-40 and column 5, line 64 – column 6, line 56).

Referring to claims 139, 148, 156, 164 and 172, Skidmore, as modified, teach a display for displaying simulated or predicted data as one of a) a grid of data points, b) one or more contours identifying equal performance, and c) one or more points where a simulated user is tracked within a building (the display displays simulated/predicted coverage contours on a grid of data points, i.e. a grid display of a floor of a building) (Skidmore: Figure 5.9).

Referring to claims 149, 157, 165 and 173, Skidmore, as modified, teach the step of position-tracking movements of one or more users within the physical environment, and displaying the movements on a display (measuring the position/location of a user within an area via a GPS device and displaying map information corresponding to the tracked position of the user on the display) (Jin: column 4, lines 8-14 and 33-39, column 5, line 64-column 6, line 56 and column 9, line 35-column 10, line 10).

Response to Arguments

5. Applicant's arguments with respect to claims 2-15 and 28-173 have been considered but are moot in view of the new ground(s) of rejection.

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ting Zhou whose telephone number is (571) 272-4058. The examiner can normally be reached on Monday - Friday 7:00 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Cabeca can be reached at (571) 272-4048. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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